

RAW SEQUENCE LISTING

The Biotechnology Systems Branch of the Scientific and Technical
Information Center (STIC) no errors detected.

Application Serial Number: 10/751,702A
Source: 1FW/6
Date Processed by STIC: 1/19/07

ENTERED

CRF Errors Edited by the STIC Systems Branch

Serial Number: 10/751,702A

CRF Edit Date: 1/19/07
Edited by: ku

___ Realigned nucleic acid/amino acid numbers/text in cases where the sequence text "wrapped" to the next line

✓ Corrected the SEQ ID NO. Sequence numbers edited were:

40

___ Inserted or corrected a nucleic number at the end of a nucleic line. SEQ ID NO's edited:

___ Deleted: ___ invalid beginning/end-of-file text ; ___ page numbers

___ Inserted mandatory headings/numeric identifiers, specifically:

___ Moved responses to same line as heading/numeric identifier, specifically:

___ Other:



IFW16

RAW SEQUENCE LISTING

DATE: 01/19/2007

PATENT APPLICATION: US/10/751,702A

TIME: 12:27:27

Input Set : A:\PTO.txt

Output Set: N:\CRF4\01192007\J751702A.raw

3 <110> APPLICANT: Tuomanen, Elaine I
 4 Wizemann, Theresa M.
 5 Masure, H. R.
 6 Johnson, Leslie S.
 7 Koenig, Scott
 9 <120> TITLE OF INVENTION: POLYPEPTIDE COMPRISING THE AMINO ACID OF AN N-TERMINAL
 10 CHOLINE BINDING PROTEIN A TRUNCATE, VACCINE DERIVED
 11 THEREFROM AND USES THEREOF
 13 <130> FILE REFERENCE: 044158/273011
 15 <140> CURRENT APPLICATION NUMBER: 10/751,702A
 16 <141> CURRENT FILING DATE: 2004-01-05
 18 <150> PRIOR APPLICATION NUMBER: 09/056,019
 19 <151> PRIOR FILING DATE: 1998-04-07
 21 <160> NUMBER OF SEQ ID NOS: 42
 23 <170> SOFTWARE: PatentIn Ver. 2.0
 25 <210> SEQ ID NO: 1
 26 <211> LENGTH: 406
 27 <212> TYPE: PRT
 28 <213> ORGANISM: Streptococcus pneumoniae
 30 <400> SEQUENCE: 1
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 32 1 5 10 15
 34 Glu Ser Gln Ala Glu Gln Gly Glu Gln Pro Lys Lys Leu Asp Ser Glu
 35 20 25 30
 37 Arg Asp Lys Ala Arg Lys Glu Val Glu Glu Tyr Val Lys Lys Ile Val
 38 35 40 45
 40 Gly Glu Ser Tyr Ala Lys Ser Thr Lys Lys Arg His Thr Ile Thr Val
 41 50 55 60
 43 Ala Leu Val Asn Glu Leu Asn Asn Ile Lys Asn Glu Tyr Leu Asn Lys
 44 65 70 75 80
 46 Ile Val Glu Ser Thr Ser Glu Ser Gln Leu Gln Ile Leu Met Met Glu
 47 85 90 95
 49 Ser Arg Ser Lys Val Asp Glu Ala Val Ser Lys Phe Glu Lys Asp Ser
 50 100 105 110
 52 Ser Ser Ser Ser Ser Asp Ser Ser Thr Lys Pro Glu Ala Ser Asp
 53 115 120 125
 55 Thr Ala Lys Pro Asn Lys Pro Thr Glu Pro Gly Glu Lys Val Ala Glu
 56 130 135 140
 58 Ala Lys Lys Lys Val Glu Glu Ala Glu Lys Lys Ala Lys Asp Gln Lys
 59 145 150 155 160
 61 Glu Glu Asp Arg Arg Asn Tyr Pro Thr Ile Thr Tyr Lys Thr Leu Glu
 62 165 170 175
 64 Leu Glu Ile Ala Glu Ser Asp Val Glu Val Lys Lys Ala Glu Leu Glu

see p. 6

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Input Set : A:\PTO.txt

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65          180          185          190
67 Leu Val Lys Val Lys Ala Asn Glu Pro Arg Asp Glu Gln Lys Ile Lys
68          195          200          205
70 Gln Ala Glu Ala Glu Val Glu Ser Lys Gln Ala Glu Ala Thr Arg Leu
71          210          215          220
73 Lys Lys Ile Lys Thr Asp Arg Glu Glu Ala Glu Glu Ala Lys Arg
74 225          230          235          240
76 Arg Ala Asp Ala Lys Glu Gln Gly Lys Pro Lys Gly Arg Ala Lys Arg
77          245          250          255
79 Gly Val Pro Gly Glu Leu Ala Thr Pro Asp Lys Lys Glu Asn Asp Ala
80          260          265          270
82 Lys Ser Ser Asp Ser Ser Val Gly Glu Glu Thr Leu Pro Ser Pro Ser
83          275          280          285
85 Leu Lys Pro Glu Lys Lys Val Ala Glu Ala Glu Lys Lys Val Glu Glu
86          290          295          300
88 Ala Lys Lys Lys Ala Glu Asp Gln Lys Glu Glu Asp Arg Arg Asn Tyr
89 305          310          315          320
91 Pro Thr Asn Thr Tyr Lys Thr Leu Glu Leu Glu Ile Ala Glu Ser Asp
92          325          330          335
94 Val Glu Val Lys Lys Ala Glu Leu Glu Leu Val Lys Glu Glu Ala Lys
95          340          345          350
97 Glu Pro Arg Asn Glu Glu Lys Val Lys Gln Ala Lys Ala Glu Val Glu
98          355          360          365
100 Ser Lys Lys Ala Glu Ala Thr Arg Leu Glu Lys Ile Lys Thr Asp Arg
101          370          375          380
103 Lys Lys Ala Glu Glu Glu Ala Lys Arg Lys Ala Ala Glu Glu Asp Lys
104 385          390          395          400
106 Val Lys Glu Lys Pro Ala
107          405
110 <210> SEQ ID NO: 2
111 <211> LENGTH: 655
112 <212> TYPE: PRT
113 <213> ORGANISM: Streptococcus pneumoniae
115 <400> SEQUENCE: 2
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117 1          5          10          15
119 Glu Ser Gln Ala Glu Gln Gly Glu Gln Pro Lys Lys Leu Asp Ser Glu
120          20          25          30
122 Arg Asp Lys Ala Arg Lys Glu Val Glu Glu Tyr Val Lys Lys Ile Val
123          35          40          45
125 Gly Glu Ser Tyr Ala Lys Ser Thr Lys Lys Arg His Thr Ile Thr Val
126          50          55          60
128 Ala Leu Val Asn Glu Leu Asn Asn Ile Lys Asn Glu Tyr Leu Asn Lys
129 65          70          75          80
131 Ile Val Glu Ser Thr Ser Glu Ser Gln Leu Gln Ile Leu Met Met Glu
132          85          90          95
134 Ser Arg Ser Lys Val Asp Glu Ala Val Ser Lys Phe Glu Lys Asp Ser
135          100          105          110
137 Ser Ser Ser Ser Ser Ser Asp Ser Ser Thr Lys Pro Glu Ala Ser Asp

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138		115		120		125										
140	Thr	Ala	Lys	Pro	Asn	Lys	Pro	Thr	Glu	Pro	Gly	Glu	Lys	Val	Ala	Glu
141		130					135					140				
143	Ala	Lys	Lys	Lys	Val	Glu	Glu	Ala	Glu	Lys	Lys	Ala	Lys	Asp	Gln	Lys
144	145					150					155					160
146	Glu	Glu	Asp	Arg	Arg	Asn	Tyr	Pro	Thr	Ile	Thr	Tyr	Lys	Thr	Leu	Glu
147					165					170						175
149	Leu	Glu	Ile	Ala	Glu	Ser	Asp	Val	Glu	Val	Lys	Lys	Ala	Glu	Leu	Glu
150				180					185					190		
152	Leu	Val	Lys	Val	Lys	Ala	Asn	Glu	Pro	Arg	Asp	Glu	Gln	Lys	Ile	Lys
153		195					200					205				
155	Gln	Ala	Glu	Ala	Glu	Val	Glu	Ser	Lys	Gln	Ala	Glu	Ala	Thr	Arg	Leu
156		210					215					220				
158	Lys	Lys	Ile	Lys	Thr	Asp	Arg	Glu	Glu	Ala	Glu	Glu	Glu	Ala	Lys	Arg
159	225					230					235					240
161	Arg	Ala	Asp	Ala	Lys	Glu	Gln	Gly	Lys	Pro	Lys	Gly	Arg	Ala	Lys	Arg
162				245					250						255	
164	Gly	Val	Pro	Gly	Glu	Leu	Ala	Thr	Pro	Asp	Lys	Lys	Glu	Asn	Asp	Ala
165				260					265					270		
167	Lys	Ser	Ser	Asp	Ser	Ser	Val	Gly	Glu	Glu	Thr	Leu	Pro	Ser	Pro	Ser
168		275					280					285				
170	Leu	Lys	Pro	Glu	Lys	Lys	Val	Ala	Glu	Ala	Glu	Lys	Lys	Val	Glu	Glu
171		290					295					300				
173	Ala	Lys	Lys	Lys	Ala	Glu	Asp	Gln	Lys	Glu	Glu	Asp	Arg	Arg	Asn	Tyr
174	305					310					315					320
176	Pro	Thr	Asn	Thr	Tyr	Lys	Thr	Leu	Glu	Leu	Glu	Ile	Ala	Glu	Ser	Asp
177				325					330					335		
179	Val	Glu	Val	Lys	Lys	Ala	Glu	Leu	Glu	Leu	Val	Lys	Glu	Glu	Ala	Lys
180				340					345					350		
182	Glu	Pro	Arg	Asn	Glu	Glu	Lys	Val	Lys	Gln	Ala	Lys	Ala	Glu	Val	Glu
183			355				360					365				
185	Ser	Lys	Lys	Ala	Glu	Ala	Thr	Arg	Leu	Glu	Lys	Ile	Lys	Thr	Asp	Arg
186		370					375				380					
188	Lys	Lys	Ala	Glu	Glu	Glu	Ala	Lys	Arg	Lys	Ala	Ala	Glu	Glu	Asp	Lys
189	385					390					395					400
191	Val	Lys	Glu	Lys	Pro	Ala	Glu	Gln	Pro	Gln	Pro	Ala	Pro	Ala	Pro	Lys
192				405					410					415		
194	Ala	Glu	Lys	Pro	Ala	Pro	Ala	Pro	Lys	Pro	Glu	Asn	Pro	Ala	Glu	Gln
195				420					425					430		
197	Pro	Lys	Ala	Glu	Lys	Pro	Ala	Asp	Gln	Gln	Ala	Glu	Glu	Asp	Tyr	Ala
198			435				440					445				
200	Arg	Arg	Ser	Glu	Glu	Glu	Tyr	Asn	Arg	Leu	Thr	Gln	Gln	Gln	Pro	Pro
201		450					455					460				
203	Lys	Thr	Glu	Lys	Pro	Ala	Gln	Pro	Ser	Thr	Pro	Lys	Thr	Gly	Trp	Lys
204	465					470					475					480
206	Gln	Glu	Asn	Gly	Met	Trp	Tyr	Phe	Tyr	Asn	Thr	Asp	Gly	Ser	Met	Ala
207				485						490					495	
209	Thr	Gly	Trp	Leu	Gln	Asn	Asn	Gly	Ser	Trp	Tyr	Tyr	Leu	Asn	Ser	Asn
210				500					505					510		

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Input Set : A:\PTO.txt

Output Set: N:\CRF4\01192007\J751702A.raw

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212 Gly Ala Met Ala Thr Gly Trp Leu Gln Asn Asn Gly Ser Trp Tyr Tyr
213      515      520      525
215 Leu Asn Ala Asn Gly Ser Met Ala Thr Gly Trp Leu Gln Asn Asn Gly
216      530      535      540
218 Ser Trp Tyr Tyr Leu Asn Ala Asn Gly Ser Met Ala Thr Gly Trp Leu
219 545      550      555      560
221 Gln Tyr Asn Gly Ser Trp Tyr Tyr Leu Asn Ala Asn Gly Ser Met Ala
222      565      570      575
224 Thr Gly Trp Leu Gln Tyr Asn Gly Ser Trp Tyr Tyr Leu Asn Ala Asn
225      580      585      590
227 Gly Asp Met Ala Thr Gly Trp Val Lys Asp Gly Asp Thr Trp Tyr Tyr
228      595      600      605
230 Leu Glu Ala Ser Gly Ala Met Lys Ala Ser Gln Trp Phe Lys Val Ser
231      610      615      620
233 Asp Lys Trp Tyr Tyr Val Asn Gly Ser Gly Ala Leu Ala Val Asn Thr
234 625      630      635      640
236 Thr Val Asp Gly Tyr Gly Val Asn Ala Asn Gly Glu Trp Val Asn
237      645      650      655
240 <210> SEQ ID NO: 3
241 <211> LENGTH: 284
242 <212> TYPE: PRT
243 <213> ORGANISM: Streptococcus pneumoniae
245 <400> SEQUENCE: 3
246 Glu Asn Glu Gly Ala Thr Gln Val Pro Thr Ser Ser Asn Arg Ala Asn
247 1      5      10      15
249 Glu Ser Gln Ala Glu Gln Gly Glu Gln Pro Lys Lys Leu Asp Ser Glu
250      20      25      30
252 Arg Asp Lys Ala Arg Lys Glu Val Glu Glu Tyr Val Lys Lys Ile Val
253      35      40      45
255 Gly Glu Ser Tyr Ala Lys Ser Thr Lys Lys Arg His Thr Ile Thr Val
256      50      55      60
258 Ala Leu Val Asn Glu Leu Asn Asn Ile Lys Asn Glu Tyr Leu Asn Lys
259 65      70      75      80
261 Ile Val Glu Ser Thr Ser Glu Ser Gln Leu Gln Ile Leu Met Met Glu
262      85      90      95
264 Ser Arg Ser Lys Val Asp Glu Ala Val Ser Lys Phe Glu Lys Asp Ser
265      100      105      110
267 Ser Ser Ser Ser Ser Ser Asp Ser Ser Thr Lys Pro Glu Ala Ser Asp
268      115      120      125
270 Thr Ala Lys Pro Asn Lys Pro Thr Glu Pro Gly Glu Lys Val Ala Glu
271      130      135      140
273 Ala Lys Lys Lys Val Glu Glu Ala Glu Lys Lys Ala Lys Asp Gln Lys
274 145      150      155      160
276 Glu Glu Asp Arg Arg Asn Tyr Pro Thr Ile Thr Tyr Lys Thr Leu Glu
277      165      170      175
279 Leu Glu Ile Ala Glu Ser Asp Val Glu Val Lys Lys Ala Glu Leu Glu
280      180      185      190
282 Leu Val Lys Val Lys Ala Asn Glu Pro Arg Asp Glu Gln Lys Ile Lys
283      195      200      205

```

RAW SEQUENCE LISTING

DATE: 01/19/2007

PATENT APPLICATION: US/10/751,702A

TIME: 12:27:27

Input Set : A:\PTO.txt

Output Set: N:\CRF4\01192007\J751702A.raw

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285 Gln Ala Glu Ala Glu Val Glu Ser Lys Gln Ala Glu Ala Thr Arg Leu
286      210      215      220
288 Lys Lys Ile Lys Thr Asp Arg Glu Glu Ala Glu Glu Glu Ala Lys Arg
289 225      230      235      240
291 Arg Ala Asp Ala Lys Glu Gln Gly Lys Pro Lys Gly Arg Ala Lys Arg
292      245      250      255
294 Gly Val Pro Gly Glu Leu Ala Thr Pro Asp Lys Lys Glu Asn Asp Ala
295      260      265      270
297 Lys Ser Ser Asp Ser Ser Val Gly Glu Glu Thr Leu
298      275      280

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301 <210> SEQ ID NO: 4

302 <211> LENGTH: 106

303 <212> TYPE: PRT

304 <213> ORGANISM: Streptococcus pneumoniae

306 <400> SEQUENCE: 4

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307 Lys Pro Glu Lys Lys Val Ala Glu Ala Glu Lys Lys Val Glu Glu Ala
308 1      5      10      15
310 Lys Lys Lys Ala Glu Asp Gln Lys Glu Glu Asp Arg Arg Asn Tyr Pro
311      20      25      30
313 Thr Asn Thr Tyr Lys Thr Leu Glu Leu Glu Ile Ala Glu Ser Asp Val
314      35      40      45
316 Glu Val Lys Lys Ala Glu Leu Glu Leu Val Lys Glu Glu Ala Lys Glu
317      50      55      60
319 Pro Arg Asn Glu Glu Lys Val Lys Gln Ala Lys Ala Glu Val Glu Ser
320 65      70      75      80
322 Lys Lys Ala Glu Ala Thr Arg Leu Glu Lys Ile Lys Thr Asp Arg Lys
323      85      90      95
325 Lys Ala Glu Glu Glu Ala Lys Arg Lys Ala
326      100      105

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329 <210> SEQ ID NO: 5

330 <211> LENGTH: 109

331 <212> TYPE: PRT

332 <213> ORGANISM: Streptococcus pneumoniae

334 <400> SEQUENCE: 5

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335 Thr Glu Pro Gly Glu Lys Val Ala Glu Ala Lys Lys Lys Val Glu Glu
336 1      5      10      15
338 Ala Glu Lys Lys Ala Lys Asp Gln Lys Glu Glu Asp Arg Arg Asn Tyr
339      20      25      30
341 Pro Thr Ile Thr Tyr Lys Thr Leu Glu Leu Glu Ile Ala Glu Ser Asp
342      35      40      45
344 Val Glu Val Lys Lys Ala Glu Leu Glu Leu Val Lys Val Lys Ala Asn
345      50      55      60
347 Glu Pro Arg Asp Glu Gln Lys Ile Lys Gln Ala Glu Ala Glu Val Glu
348 65      70      75      80
350 Ser Lys Gln Ala Glu Ala Thr Arg Leu Lys Lys Ile Lys Thr Asp Arg
351      85      90      95
353 Glu Glu Ala Glu Glu Glu Ala Lys Arg Arg Ala Asp Ala
354      100      105

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357 <210> SEQ ID NO: 6

RAW SEQUENCE LISTING ERROR SUMMARY
PATENT APPLICATION: US/10/751,702A

DATE: 01/19/2007
TIME: 12:27:28

Input Set : A:\PTO.txt
Output Set: N:\CRF4\01192007\J751702A.raw

FJI
Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:6; Xaa Pos. 2,3

Seq#:27; Xaa Pos. 1

Seq#:28; Xaa Pos. 243

Seq#:40; Xaa Pos. 1,44,45,46,47,48,49,50,51,52,53,54,64,65,66,68,69,114,115

Seq#:40; Xaa Pos. 116,131,132,133,134,135,136,137,138,139,140,141,142,143

Seq#:40; Xaa Pos. 144,145,146,147,148,149,150,151,173,174,175,176,177,178

Seq#:40; Xaa Pos. 179,262,275,276,277,281,428,470

VERIFICATION SUMMARY

DATE: 01/19/2007

PATENT APPLICATION: US/10/751,702A

TIME: 12:27:28

Input Set : A:\PTO.txt

Output Set: N:\CRF4\01192007\J751702A.raw

L:369 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:6 after pos.:0
L:1102 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:27 after pos.:0
L:1162 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:28 after pos.:240
L:2202 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!
L:2209 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:40
L:2213 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:40
L:2214 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:40 after pos.:0
M:341 Repeated in SeqNo=40
L:2288 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!
L:2292 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:41
L:2296 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:41
L:2300 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:41

**Raw Sequence Listing before editing
(for reference only)**



IFW16

RAW SEQUENCE LISTING

DATE: 01/17/2007

PATENT APPLICATION: US/10/751,702A

TIME: 14:32:16

Input Set : A:\seq list 1-11-97.txt

Output Set: N:\CRF4\01172007\J751702A.raw

**Does Not Comply
Corrected Diskette Needed**

3 <110> APPLICANT: Tuomanen, Elaine I
4 Wizemann, Theresa M.
5 Masure, H. R.
6 Johnson, Leslie S.
7 Koenig, Scott
9 <120> TITLE OF INVENTION: POLYPEPTIDE COMPRISING THE AMINO ACID OF AN N-TERMINAL
10 CHOLINE BINDING PROTEIN A TRUNCATE, VACCINE DERIVED
11 THEREFROM AND USES THEREOF
13 <130> FILE REFERENCE: 044158/273011
15 <140> CURRENT APPLICATION NUMBER: 10/751,702A
16 <141> CURRENT FILING DATE: 2004-01-05
18 <150> PRIOR APPLICATION NUMBER: 09/056,019
19 <151> PRIOR FILING DATE: 1998-04-07
21 <160> NUMBER OF SEQ ID NOS: 42
23 <170> SOFTWARE: PatentIn Ver. 2.0

ERRORED SEQUENCES

see p.3

VERIFICATION SUMMARY

DATE: 01/17/2007

PATENT APPLICATION: US/10/751,702A

TIME: 14:32:17

Input Set : A:\seq list 1-11-97.txt

Output Set: N:\CRF4\01172007\J751702A.raw

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L:1102 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:27 after pos.:0
L:1162 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:28 after pos.:240
L:2202 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!
L:2209 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:40
L:2213 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:40
L:2213 M:212 E: (34) Invalid or duplicate Sequence ID Number, SEQUENCE ID NOS:40 differs:1
L:2214 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1 after pos.:0
M:341 Repeated in SeqNo=40
L:2288 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!
L:2292 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:41
L:2296 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:41
L:2300 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:41

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<210> 40
<211> 492
<212> PRT
<213> Artificial Sequence

<220>
<223> consensus sequence for CbpA N-terminal region

<221> VARIANT
<222> 1, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 64, 65, 66,
68, 69, 114, 115, 116, 131, 132, 133, 134, 135, 136, 137,
138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149,
150, 151, 173, 174, 175, 176, 177, 178, 179, 262, 275
<223> Xaa = Any Amino Acid or other (i.e., deletion)

<221> VARIANT
<222> 276, 277, 281, 428, 470
<223> Xaa = Any Amino Acid or other (i.e., deletion)

<400> ① 40 ← change to